

REMARKS

As a preliminary matter, Applicants and the undersigned would like to thank Examiner Jeffery for the courtesy in granting an interview and graciously taking the time to discuss the merits of the case during the office interview of June 29, 2005. The substance of the interview, including a complete written statement, is contained in the Interview Summary dated June 29, 2005.

Claims 1-78 are pending in the present application and have been finally rejected. Reconsideration of the Office Action of February 23, 2005 is respectfully requested in view of the substance of the office interview and the following remarks.

Claims Rejections under 35 U.S.C. § 103(a):

1. The Examiner has rejected the pending claims under 35 U.S.C. § 103(a) as allegedly being unpatentable over one or a combination of references. Claims 1-8, 10-12, 14, 20, 29, 38, 42, 46-49, 54, 57, 58, and 62-64 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Alban (USP 4,780,595) in view of WO03/009735; claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735 and further in view of Kunz (USP 3,725,640); claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735 and further in view of Bailey (US Des. 468,005); claims 15-18, 21, 22, and 39-41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735 and further in view of Schafer (US 2004/0213559); claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Schafer and further in view of Shih-Chin (USP 4,703,152); claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Schafer and further in view of Covault (USP 3,575,582); claim 24 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Schafer and further in view of Bailey; claims 25-28, 65-71, and 73 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Schafer and further in view of Jones (USP 4,197,447); claims 30-37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Goldstein (US RE37,642) and further in view of Yeh (USP 5,192,853);

claims 43-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735 and further in view of Tedioli (USP 4,760,243); claims 50-53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Goldstein, and further in view of Yeh; claims 55, 56, 59-61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735 and further in view of Schafer; claim 72 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of WO03/009735, Schafer, Jones, and further in view of Bailey; and claims 74-78 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alban in view of Schafer, WO03/009735, Goldstein, and further in view of Yeh.

Applicants respectfully traverse the rejections under 35 U.S.C. § 103(a) and submit that no single reference or proper combination of the references of record would yield Applicants' unique invention, as recited in the claims of the present application.

For an Examiner to make a rejection based on obviousness, 35 U.S.C. § 103(a) and MPEP § 2141 require adherence to the following tenets of patent law: (A) the claimed invention must be considered as a whole; (B) the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) reasonable expectation of success is the standard with which obviousness is determined.

To establish a *prima facie* obviousness, MPEP §2142 requires that an examiner bear the initial burden of factually supporting any *prima facie* conclusion of obviousness. There must first be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or references when combined must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure.

It is respectfully submitted that the examiner has not established a *prima facie* case of obviousness for several reasons as discussed during the office interview and as explained in more detail below.

1. WO03/009735, Shafer, and Shapiro Are Not Prior Art:

To rely on a reference under 35 U.S.C. 103, it must be prior art. It is respectfully submitted that the claims of the present application have a priority date that is before the effective dates of the WO03/009735, Shafer, and Shapiro references and therefore these references are not prior art to the pending claims. In support of this position, Applicants submit herein Appendix A that establishes invention of the subject matter of the rejected claims in the United States prior to the effective dates of the WO03/009735, Shafer, and Shapiro references. As requested by the examiner during the office interview, Applicants herein provide a detailed comparison showing support in the parent application for the claimed features of the independent claims of the present application (see Appendix A).

The present application is a Continuation-In-Part application of U.S. Application No. 10/322,169, filed on December 18, 2002, now U.S. patent no. 6,760,543. Appendix A establishes that the rejected claims of the present application have an effective date of December 18, 2002. The WO03/009735 reference is an international patent application and has an effective date as of its international publication date of February 6, 2003. Shafer is a published U.S. patent application that was filed on April 28, 2003 and has a publication date of October 28, 2004. Shapiro is also a published U.S. patent application that was filed on May 27, 2004 and has a publication date of November 4, 2004. Accordingly, the earliest effective date of these three references is February 6, 2003. Appendix A establishes that the effective date of the subject matter of the rejected claims predates the earliest possible effective dates of WO03/009735, Shafer, and Shapiro.

The WO03/009735 reference is used in the rejection of all of the pending claims and the Shafer reference is used in the rejection of claims 15-19, 21-28, 39-41, 55, 56, 59-61, 65-78. Since the WO03/009735, Shafer, and Shapiro references do not qualify as prior art to the claims of the present application it is improper to rely on those references under 35 U.S.C. 103. For this reason, Applicants respectfully solicit reconsideration and allowance of all the pending claims.

2. Non-Analogous Art:

To rely on a reference under 35 U.S.C. 103, it must be analogous prior art. MPEP 2141.01(a). An examiner must determine what is “analogous prior art” for the purpose of analyzing the obviousness of the subject matter at issue. “In order to rely on a reference as a basis for rejection of an applicants’ invention, the reference must either be in the field of applicants’ endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

In the instant case, several of the references relied upon by the Examiner are non-analogous art. The field of applicants’ endeavor in the present application is heaters, and more particularly, electric heaters for heating an area, such as a room or space. In contrast, U.S. Patent 4,780,595 (Alban), US 2004/0213559 (Schafer) and WO 03/009735 are directed to dryers, and more particularly, to body dryers for drying the body and hair of a person using air flow. Since the invention of the present application is directed to a different field of endeavor than the body dryer references, those references are non-analogous prior art.

In addition, a reference may be reasonably pertinent if, even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem. *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

The particular problem that the inventors in the present application were concerned is elevating the temperature in a living space and allowing a user to more quickly experience the produced heat in order to satisfactorily heat the living space and more immediately warm the user. In contrast, the body dryer references (Alban, Schafer, and WO 03/009735) are concerned with drying the human body and hair. The body dryer references are not reasonably pertinent to the particular problem with which the inventors of the present application were concerned.

The following provides further clarification of the differences between the particular problems to be solved in designing heaters versus dryers. In designing a space heater, drying the air is a detriment and distracts from the environmental comfort. For example, when heating a room a certain humidity level is desirable for user comfort and in recognition of this

an entire industry of both portable and furnace humidification has grown around the desire to maintain a desired humidity level while heating the air. Also, because heaters are not used in close proximity to the user (as compared to body dryers), higher exit air temperatures may be used with a heater than a body dryer.

In addition, the purpose of a body dryer is to extract moisture using air. This is accomplished by increasing the flow velocity and exposing a user to a greater volume of air to increase convective evaporation and the performance of a body dryer. The air exiting the body dryer can be heater to further enhance the performance of the dryer, but it will have a limited maximum temperature for safety purposes. Limiting the exit temperature of the air exiting a body dryer means that the volume of air needs to be increased to augment the water evaporation from the user. Further, the use of the body dryer would be in an enclosed room, such as a bathroom after a bath or shower. The vapor density in the air would already be elevated in the room and thus require even greater volumes of air to be produced in order for the dryer to effectively dry the user. The velocities accompanying the needed air volume required to produce the desired drying characteristics would be quite high. The cooling effect of a high velocity air flow over a user is undesirable in heaters and hence lower air volumes and velocities are used to mitigate thermal stratification in a room while avoiding wind chill and draft problems.

As can be seen from the above examples, the particular problems to be solved are quite different and the structures used to solve to problems particular to each are also different.

Furthermore, obviousness is determined on the totality of the record. See *In re Paul Chu*, 66 F.3d 292, 298 (Fed. Cir. 1995). Here the weight of the evidence of record teaches away from the use of warm air from heaters for drying oneself because, according to the dryer references, conventional heaters do not provide an efficient method of drying. See, WO 03/009735 at p. 1, lines 9-11. The WO 03/009735 reference further states “the hot central blade within the buttress of the cooler air wraps around a person’s body, thereby effectively transferring heat to the person’s body to dry the wet body with a minimal waste loss to the surrounding air. *Id.* at p. 1, lines 33-37.

Also, Schafer likewise teaches that conventional portable room heaters do not have sufficient air flow and do not heat a large enough surface area to effectively dry a person's body. See Schafer at col. 1, para. 0007.

Moreover, a prior art reference must be considered in its entirety, e.g., as a whole, including portions that would lead away from the claimed invention. MPEP 2141.02 (emphasis in original). When considering the Tedioli reference, the primary reference which the examiner relies upon in the Final Rejection as an example of electrically heated, forced air convection space heater also functioning as dryers, as a whole, this reference teaches away from using conventional space heater as dryers and vice-a-versa. The Tedioli reference is directed to a special application of a combination heater and clothes dryer for use in a humid or moisture laden environment, such as a bathroom. See Tedioli at col. 1, lines 8-10 and lines 39-50. The Tedioli reference notes that the aforesaid apparatuses of the heater type, which are constructed for simply resting on the ground, are not suitable for use as driers in that their design results in a hot air stream being delivered in a essentially horizontal direction, such a stream being obviously unsuitable for drying clothes hung vertically. On the other hand, apparatuses of the drier type are not suitable as heaters, because their air stream is directed vertically in proximity to a bathroom wall, it provides no environment comfort. Id. at col. 1, lines 26-35. As such, it is respectfully submitted, Tedioli actually supports Applicants' position and is further evidence in the prior art that recognizes and teaches the distinction between the problem to be solved with space heaters (e.g., providing environmental comfort while mitigating thermal stratification and avoiding wind chill and draft problems) versus body or clothes driers (e.g., providing a high velocity air flow over a body to accelerate evaporation and extraction of moisture).

Accordingly, the totality of the circumstances and the weight of the evidence of record teaches away from the claimed invention. Also, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art at the time of the invention, to modify the references or to combine reference teachings. Therefore, the examiner has failed to establish a prima facie case of obviousness.

It is improper to rely on the dryer references (Alban, Schafer, and WO 03/009735) under 35 U.S.C. §103 since those references are non-analogous art, teach away from the

claimed invention, and also because there is no motivation to combine the body dryer references with any of the space heater references. The body dryer references are in a different field of endeavor from the portable electric heater of the present application. In addition, the body dryer references are not reasonably pertinent because the matter in which they deal would not logically commend itself to the inventors' of the present application attention in considering their problem. For this additional reason, withdrawal of the rejection of pending claims 1-78 under 35 U.S.C. §103, which are all based in whole or in part on the dryer references (Alban, Schafer, and WO 03/009735), is requested because the body dryer references are non-analogous prior art and it is improper to rely on those references under 35 U.S.C. §103 and also because, the cited references lack the necessary suggestion or motivation to combine.

3. Technical Differences between the Claimed Invention and the Cited References

It is respectfully submitted that the cited references do not make obvious the claimed invention of pending claims 1, 46, 57, and 65 (the their dependent claims) because the references fails to disclose or teach one or more features of the independent claims.

For example with respect to claim 1, the art of record does not disclose or teach a portable electric heater having a vertically oriented elongate housing defining an interior space and having a vertically oriented elongate outlet opening, a vertically oriented elongate electric heating element disposed within the interior space proximate the elongate outlet opening, and an air blower assembly disposed within the interior space including a non-axial air impeller having a substantially vertical axis of rotation, wherein the flow of said exhaust air stream from said non-axial air impeller toward said at least one vertically oriented elongate outlet opening is a substantially direct and straight vector, and wherein substantially all of said exhaust air stream is heated by said at least one vertically oriented elongate electric heating element.

The independent claims include the feature of a non-axial air impeller having a vertical axis of rotation. This produces an air flow that is perpendicular to the axis of rotation of the air impeller. In contrast, Alban and WO 03/009735 have an axial fan. See, for example, Exhibit B that shows the Alban (Fig. 4) and WO 03/009735 (Fig. 15) having axial

fans in contrast to the claimed electric heater of the present invention which recites at least one non-axial air impeller having a substantially vertical axis of rotation and at least one motor for rotating said non-axial air impeller about said substantially vertical axis of rotation to generate an exhaust air stream (see, for example, Fig. 2 of the present application).

The independent claims also recite an arrangement of vertically oriented, elongate elements (i.e., housing, air blower assembly, electric heating element, outlet opening) that are aligned. This unique arrangement provides a flow through the electric heater in a substantially direct and straight vector and produces a heated exhaust air stream that exits the housing at an elevation above a support surface. This arrangement of elements also provides a space saving design over conventional heaters having, for example, axial blowers. This arrangement of elements is not disclosed or taught by the prior art of record. See, for example, Exhibits C and D, which illustrate the distinctions between the cited references and the claimed invention. Preferably the heated exhaust air stream is a contiguous column of heated exhaust air. See, for example, Exhibit E.

Further, the independent claims recite that substantially all of the exhaust air stream is heated by the vertically oriented elongate electric heating element thus forming a heated exhaust air stream. The references of record do not disclose this feature. For example, WO 03/009735, which is cited by the examiner, actually teaches away from this feature and teaches a dryer that provides a cooling effect. Fig. 26 shows that the exhaust air D may pass around the heating element 31. The flow of air out of slot 29 is in the form of a narrow blade of air, which is confined within a buttress of colder air. WO 03/009735 at p. 32. See, for example, Exhibit F - comparing Fig. 3 of the WO 03/009735 reference to Fig. 6B of the present application.

The other references of record do not cure the deficiencies of the cited references. If an independent claim is nonobvious under 35 U.S.C. §103(a), then any claim depending therefrom is nonobvious. See MPEP 2143.03. Accordingly, withdrawal of the rejections of the claims under 35 U.S.C. §103(a) is requested for these additional reasons.

Regarding the rejection of various claims reciting dimensional aspects and properties of the claimed invention, the examiner relies on conclusory statements, such as: "such parameters constitute mere engineering design preference well within the realm of routine

experimentation by skilled artisans” and “such parameters merely set forth optimum values of heaters dimensions well within the scope of routine experimentation by those skilled in the art” to allege that these claims would be obvious. The examiner, however, has not cited a single piece of prior art (or combination of prior art references) that discloses or teaches all of the features recited in the claims and therefore has not established a *prima facie* case of obviousness. It is respectfully submitted that these allegations without more and/or reliance on common knowledge in the art is insufficient to meet the basic requirements of a *prima facie* case of obviousness.

Applicants traverse the rejections based on obviousness and request that the Examiner cite a reference (or references) in support of his position, as required by MPEP 2144.03. Alternatively if the rejection is based on facts within the personal knowledge of the examiner, Applicants request that the Examiner specifically set forth the data and/or facts that are being relied upon support of such allegations in an affidavit from the Examiner, in accordance with MPEP 2144.03. Such an affidavit will provide an opportunity for Applicants to evaluate the basis of the current rejections in order to contradict the allegations or further explain the invention.

The examiner alleges in the Final Rejection that the examiner is not taking official notice of facts, but is rather merely following well-established legal principles set forth in case law. Applicants traverse these because it is Applicants position that the examiner is in fact taking official notice of facts that are then being applied to the “well-established legal principles.” Applicants continue to challenge the examiner and request that the examiner support his findings of fact with a reference or affidavit.

Further, Applicants have provided numerous examples within the specification of the benefits and advantages that the claimed dimensions, relative sizes, and properties provide, such as providing for a space savings design; providing the desired vertical aspect ratio while maintaining the desired air flow and watt density within the elongate heating element, etc. See, for example, Figs. 3A, 3B, and 4 and the description of those figures on pages 12-18. Even assuming *arguendo* that the examiner has made a *prima facie* case of obviousness, this subjective evidence rebuts any *prima facie* case of obviousness. Accordingly, withdrawal of the rejection of these claims is requested.

DOCKET NO.: LPI-239US (LASK-0016)
Application No.: 10/827,145
Office Action Dated: February 23, 2005

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

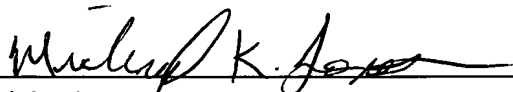
Regarding the rejection of claims 25-28 and 65-71, the Office Action states that these claims are rejected as allegedly being unpatentable over Alban in view of Schafer, and further in view of Jones. This rejection is transverse.

Jones discloses a modular infrared space heater and does not disclose or teach an air containment frame between a vertically oriented elongate electric heating element and a grill. Jones discloses a heating chamber 30 having infrared lamps 34 and a reflector 36 positioned opposite the lamps. Lens 39 are provided to concentrate infrared radiation from lamps 34 onto ferrous sheet 42 and ferrous conduits 44 (Jones at cols. 2-3). The conduits 44 disclosed by Jones serve to increase the heat transfer area (Jones at col. 4, lns. 1-5). Conduits 44 transmit heat from each "bubble" in lens 39 and do not prevent the heated exhaust air stream from expanding in an area between the vertically oriented elongate heating element and the grill. Jones does not disclose or teach an air containment frame, as recited in claims 25-28 and 65-68. Furthermore, Jones does not disclose or teach air alignment elements, as recited in claims 26-28 and 66-68. Accordingly, withdrawal of the rejection of claims 25-28 and 65-71 (and dependent claims 72-78) is requested.

Conclusion

In view of the foregoing remarks, Applicants submit that the above-identified application is in condition for allowance. Early notification to this effect is respectfully requested. If the Examiner has any questions regarding this response, the Examiner is invited to contact the undersigned attorney at (215) 568-3100.

Date: July 22, 2005


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Appendix A

<u>Application Serial No. 10/827,145</u> <u>Pending Claims</u>	<u>Support from Disclosure of Parent</u> <u>Application, now U.S. 6,760,543</u>
1. A portable electric heater for providing a heated exhaust air stream at an elevation above a support surface, said portable electric heater comprising:	Figs. 1, 2A, 3A, 4A, 4F, 4G
an elongate housing having at least one sidewall, a top end, a bottom end, and a longitudinal length extending substantially upward from said bottom end to said top, end, and a horizontal cross sectional area;	Fig. 1: 102 and Fig. 3A: 202 Fig. 3C
a base for supporting said elongate housing in a vertical and upright position on said support surface, said base contacting said support surface;	Fig. 1: 136 and Fig. 4F
at least one interior space within said elongate housing;	Fig. 1: 104, 106 and Fig. 3A: 204, 206
at least one inlet opening in said elongate housing allowing inlet air to enter said at least one interior space;	Fig. 3A entrance of intake air 212 and Fig. 3C
an air blower assembly disposed within said at least one interior space for receiving said inlet air, said air blower assembly comprising:	Fig. 3A: 210
i) at least one non-axial air impeller having a substantially vertical axis of rotation; and	Fig. 3A: 222
ii) at least one motor to rotate said non-axial air impeller about said substantially vertical axis of rotation to generate an exhaust air stream;	Fig. 3A: motor between impellers 222 Fig 3A: 216
at least one vertically oriented elongate outlet opening in said elongate housing allowing said exhaust air stream to exit said at least one interior space; and	Figs. 3A and 3C: flow path of 218
at least one vertically oriented elongate electric heating element disposed within said at least one interior space between said air blower assembly and said at least one outlet opening;	Figs. 3A-3C: 208 and Figs. 4A-4C: 208
wherein the flow of said exhaust air stream from said non-axial air impeller toward said at least one vertically oriented elongate outlet opening is a substantially direct and straight vector;	Figs. 3A-3C: 218 and Figs. 4A-4C
wherein substantially all of said exhaust air stream is heated by said at least one vertically oriented elongate electric heating element forming said heated exhaust air stream;	Figs. 3A and 3C: flow path of 218 and claim 15
wherein said heated exhaust air stream exits said elongate housing at an elevation above said support surface, said elevation being defined by a distance from where said base contacts said support surface	Figs. 1, 2A, 3A, 4A, 4F, 4G

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to a highest vertical exit point of said heated exhaust air stream from said at least one interior space; and	
wherein said elevation of said heated exhaust air stream is about 20 inches or greater.	Figs. 1, 2A, 3A, 4A, 4F, 4G and col. 3 lines 38-40
46. A portable electric heater for providing a heated exhaust air stream at an elevation above a support surface, said portable electric heater comprising:	Figs. 1, 2A, 3A, 4A, 4F, 4G
an elongate housing having at least one sidewall, a top end, a bottom end, and a longitudinal length extending substantially upward from said bottom end to said top end, and a horizontal cross sectional area;	Fig. 1: 102 and Fig. 3A: 202 Fig. 3C
a base for supporting said elongate housing in a vertical and upright position on said support surface, said base contacting said support surface;	Fig. 1: 136 and Fig. 4F
at least one interior space within said elongate housing;	Fig. 1: 104, 105 and Fig. 3A: 204, 205, 206
at least one vertically oriented elongate electric heating element disposed within said at least one interior space and oriented substantially along said longitudinal length of said elongate housing, a length of said at least one vertically oriented elongate electric heating element being about 13 inches or greater;	Figs. 3A-3C: 208 and Figs. 4A-4C: 208 col. 3 lines 38-40
at least one inlet opening in said elongate housing allowing inlet air to enter said at least one interior space;	Fig. 3A entrance of intake air 212 and Fig. 3C
an air blower assembly disposed within said at least one interior space between said at least one inlet opening and said at least one vertically oriented elongate electric heating element, said air blower assembly comprising: i) at least one non-axial air impeller; ii) at least one motor for rotating said non-axial air impeller about a substantially vertical axis of rotation to receive said inlet air and generate an exhaust air stream; and	Fig. 3A: 210 Fig. 3A: 222 exhaust air stream 216
at least one vertically oriented elongate outlet opening in said elongate housing allowing said heated exhaust air stream to exit said at least one interior space;	Figs. 3A and 3C: flow path of 218
wherein substantially all of said exhaust air stream passes through said at least one vertically oriented elongate electric heating element and thermal energy is transferred from said at least one vertically oriented elongate electric heating element to said exhaust air stream as said exhaust air stream	Figs. 3A and 3C: flow path of 218 and claim 15

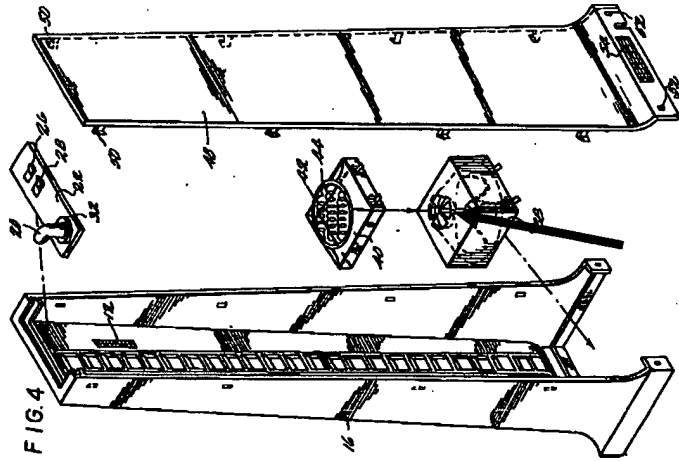
<u>Application Serial No. 10/827,145</u> <u>Pending Claims</u>	<u>Support from Disclosure of Parent</u> <u>Application, now U.S. 6,760,543</u>
flows through said at least one vertically oriented elongate electric heating element to form said heated exhaust air stream.	
57. A portable electric heater for providing a heated exhaust air stream at an elevation above a support surface, said portable electric heater comprising:	Figs. 1, 2A, 3A, 4A, 4F, 4G
an elongate housing having at least one sidewall, a top end, a bottom end, and a longitudinal length extending substantially upward from said bottom end to said top end, and a horizontal cross sectional area;	Fig. 1: 102 and Fig. 3A: 202 Fig. 3C
a base for supporting said elongate housing in a vertical and upright position on said support surface, said base contacting said support surface;	Fig. 1: 136 and Fig. 4F
an overall length defined by the distance from where said base contacts said support surface to said top end of said elongate housing, wherein said overall length being about 25 inches or greater;	Figs. 1, 2A, 3A, 4A, 4F, 4G and col. 3 lines 38-40
said elongate housing further comprising a maximum width dimension of said horizontal cross sectional area, a vertical aspect ratio defined by said overall length to said maximum width dimension and being greater than about 2 to 1;	Figs. 2A and 2B
at least one interior space within said elongate housing;	Fig. 1: 104, 105 and Fig. 3A: 204,205,206
at least one inlet opening in said elongate housing allowing inlet air to enter said at least one interior space;	Fig. 3A entrance of intake air 212 and Fig. 3C
at least one vertically oriented elongate outlet opening in said elongate housing allowing a <u>heated</u> exhaust air stream to exit said at least one interior space;	Figs. 3A and 3C: flow path of 218
at least one vertically oriented elongate electric heating element disposed within said at least one interior space proximate said at least one vertically oriented elongate outlet opening;	Figs. 3A-3C: 208 and Figs. 4A-4C: 208
an air blower assembly disposed within said at least one interior space proximate said at least one vertically oriented elongate electric heating element, said air blower assembly receiving said inlet air from said at least one inlet opening and discharging an exhaust air stream toward said at least one vertically oriented elongate electric heating element, said air blower assembly comprising: at least one non-axial air impeller and at least one motor for rotating said non-axial air impeller about a substantially vertical axis of	Fig. 3A: 210 Fig. 3A entrance of intake air 212 and Fig. 3C Figs. 3A-3C: 218 and Figs. 4A-4C Fig. 3A: 222

<u>Application Serial No. 10/827,145</u> <u>Pending Claims</u>	<u>Support from Disclosure of Parent</u> <u>Application, now U.S. 6,760,543</u>
rotation to generate said exhaust air stream;	
wherein a longitudinal length of said non-axial air impeller, said elongated electric heating element, and said outlet opening are each substantially vertically aligned and substantially horizontally aligned and the flow of said exhaust air stream from said non-axial air impeller toward said elongate electric heating element is a substantially direct and straight vector;	Figs. 3A-3C: 218
wherein substantially all of said exhaust air stream is heated by said at least one vertically oriented elongate electric heating element forming said heated exhaust air stream;	Figs. 3A and 3C: flow path of 218 and claim 15
wherein the flow of said heated exhaust air stream from said at least one vertically oriented elongate electric heating element toward said at least one vertically oriented elongate outlet opening is a substantially direct and straight vector.	Figs 3A-3C: 218
65. A portable electric heater for providing a heated exhaust air stream, said portable electric heater comprising:	Figs. 1, 2A, 3A, 4A, 4F, 4G
a housing having at least one sidewall, a top end, a bottom end, and a length extending substantially upward from said bottom end to said top end, and a horizontal cross sectional area;	Fig. 1: 102 and Fig 3A: 202 Fig. 3C
a base for supporting said housing in a upright position on a support surface, said base contacting said support surface;	Fig. 1: 136 and Fig. 4F
at least one interior space within said housing;	Fig. 1: 104, 105 and Fig. 3A: 204,205,206
at least one inlet opening in said housing allowing inlet air to enter said at least one interior space;	Fig. 3A entrance of intake air 212 and Fig. 3C
an air blower assembly disposed within said at least one interior space having an inlet port for receiving said inlet air and an exhaust port for discharging an exhaust air stream, said air blower assembly comprising:	Fig. 3A: 215 Fig. 3C
i) at least one non-axial air impeller; and	Fig. 3A: 222
ii) at least one motor for rotating said non-axial air impeller about a substantially vertical axis of rotation to generate said exhaust air stream;	Fig. 3A: 222
at least one outlet opening in said housing allowing said exhaust air stream to exit said at least one interior space;	Figs. 3A and 3C: flow path of 218
at least one vertically oriented elongate electric heating element disposed within said at least one interior space between said air blower assembly and said at least one outlet opening;	Figs. 3A-3C: 208 and Figs. 4A-4C: 208

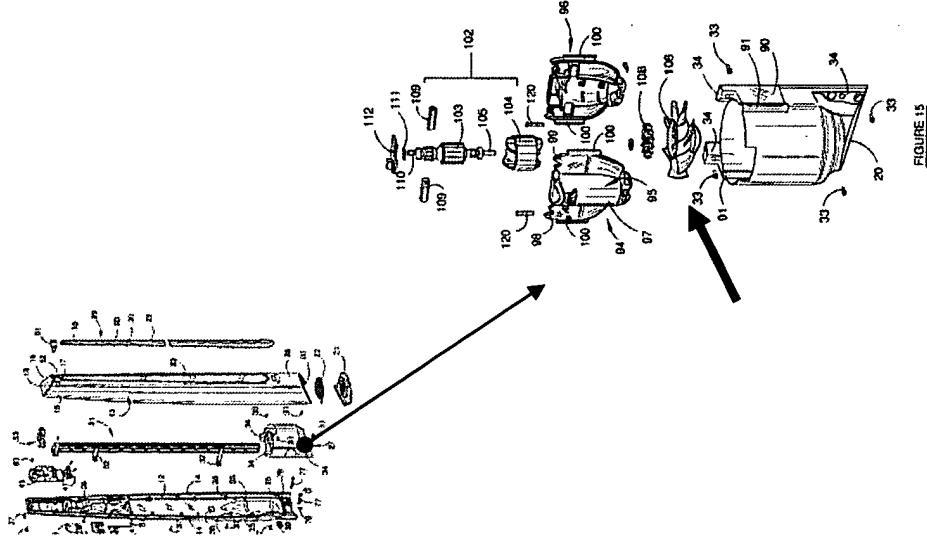
<u>Application Serial No. 10/827,145</u> <u>Pending Claims</u>	<u>Support from Disclosure of Parent</u> <u>Application, now U.S. 6,760,543</u>
a grill covering said at least one outlet opening;	Figs. 3A-3C: 208 and Figs. 4A-4C: 208
an air containment frame disposed between said vertically oriented elongate electric heating element and said grill, wherein said air containment frame is a distinct and separate part from said grill;	Fig. 1: 108, 132 and Figs. 3A and 3C: 208, 204
wherein said exhaust port of said air blower assembly, said elongate heating element, and said elongate outlet opening have substantially the same orientation and are aligned;	Fig. 3A: 205 and Fig. 3C: 213
wherein substantially all of said exhaust air stream exiting said exhaust port of said air blower assembly is heated by said at least one vertically oriented elongate electric heating element forming said heated exhaust air stream;	Figs. 3A and 3C: flow path of 218 and claim 15
wherein said containment frame prevents the said heated exhaust air stream from expanding into an area between said vertically oriented elongate electric heating element and said grill.	Figs. 3A and 3C: 208, 204

Appendix B

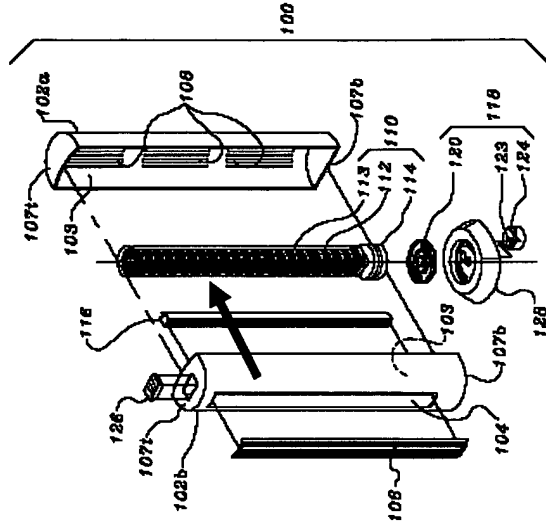
Non-Axial Impeller



Alban (US 4,780,595)



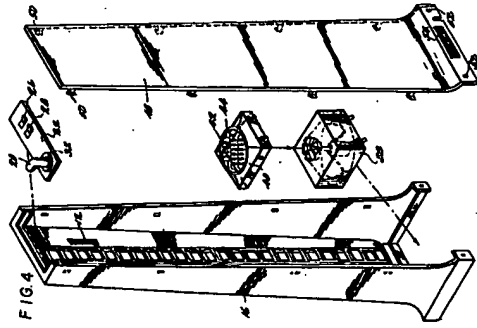
WO03/009735



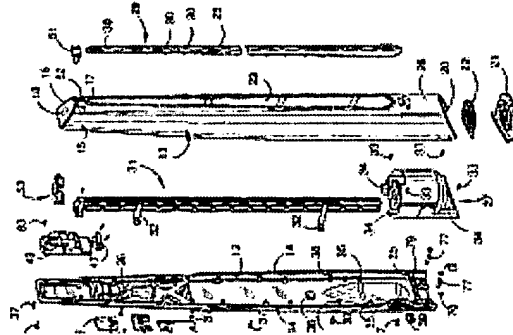
Serial No. 10/827,145:

Appendix C

Elongate and Aligned Components



Alban (US 4,780,595):



WO03/009735:

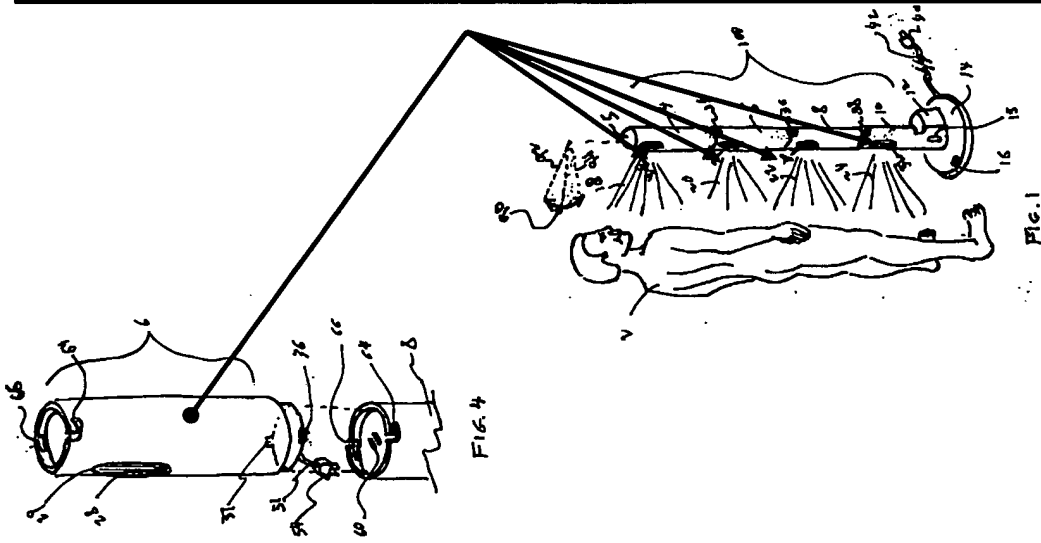


FIG. 1

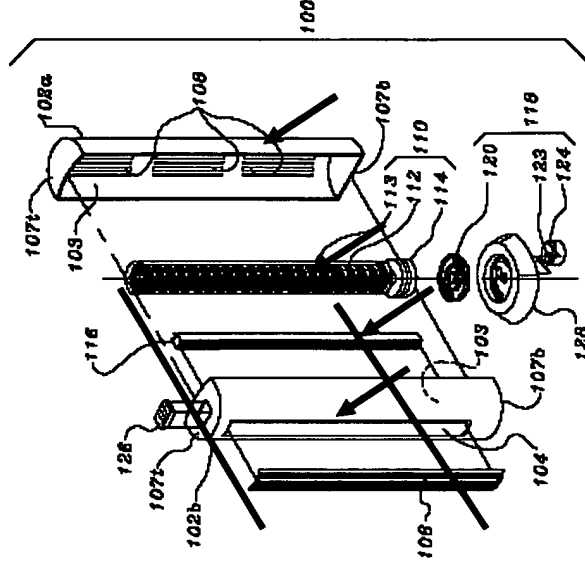


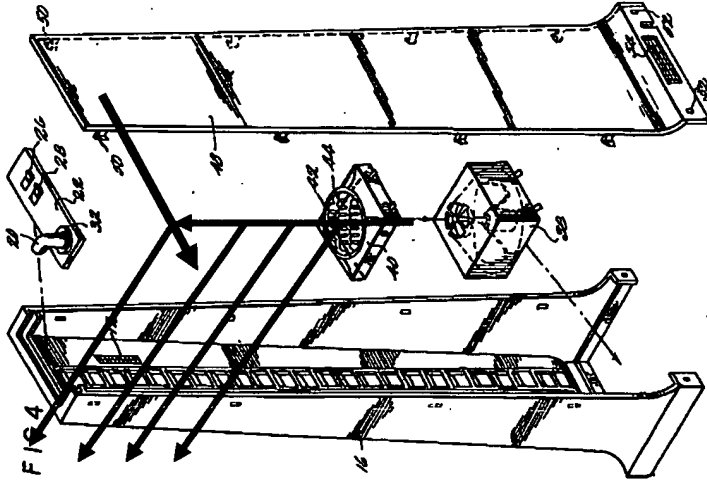
FIG. 2

Serial No. 10/827,145:

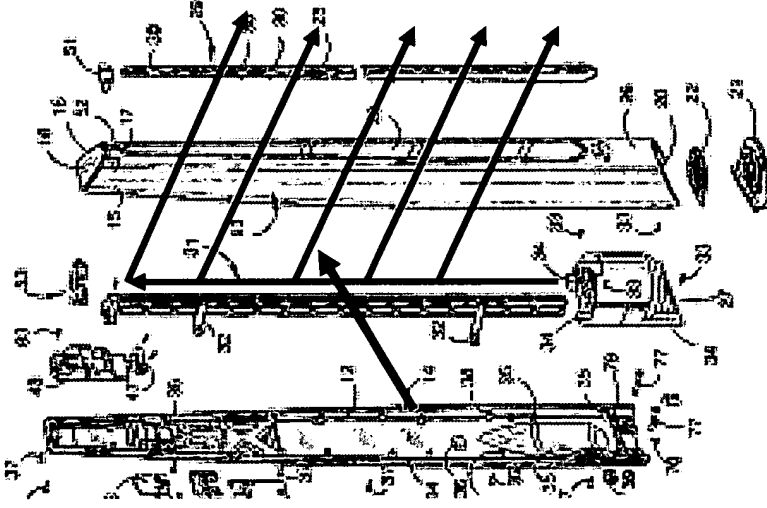
Schafer (Pub No.:US 2004/0213559)

Appendix D

Straight and Direct Vector Air Flow



Alban (US 4,780,595):



WO03/009735:

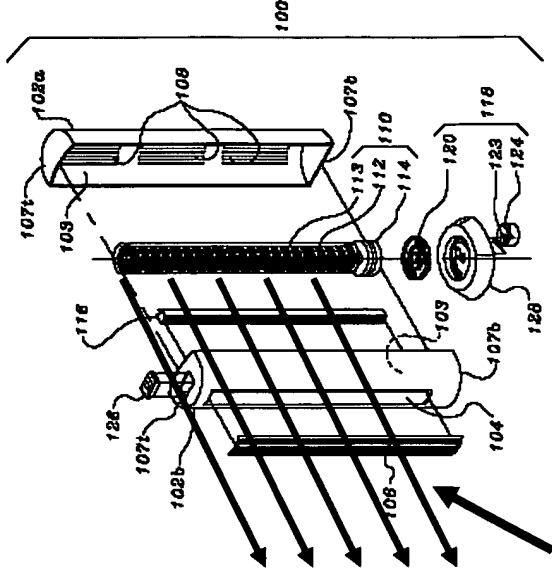
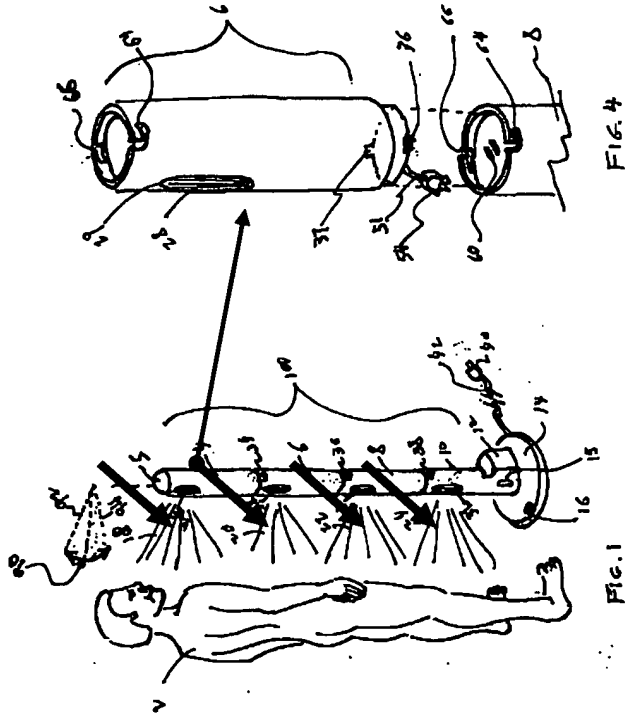


FIG. 2

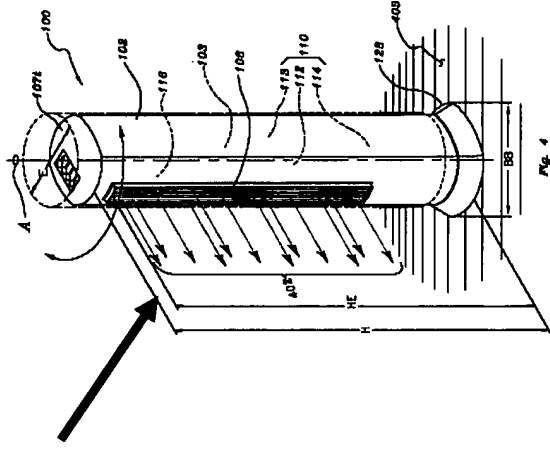
Serial No. 10/827,145:

Appendix E

Contiguous Column of Heated Exhaust Air



○ Schafer (Pub No: US 2004/0213559):



Serial No. 10/827,145:

Appendix F

Heating Substantially All of the Air

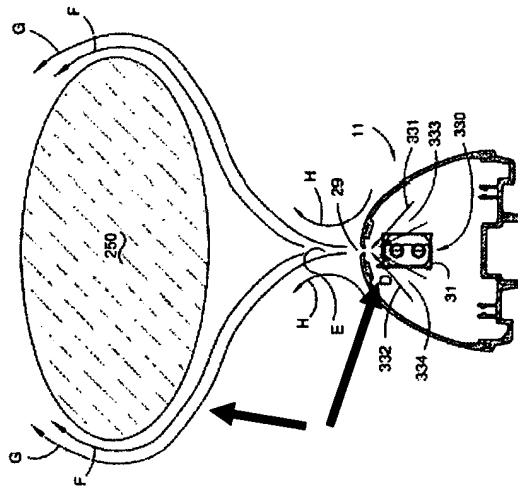


FIGURE 26

WO 03/009735:

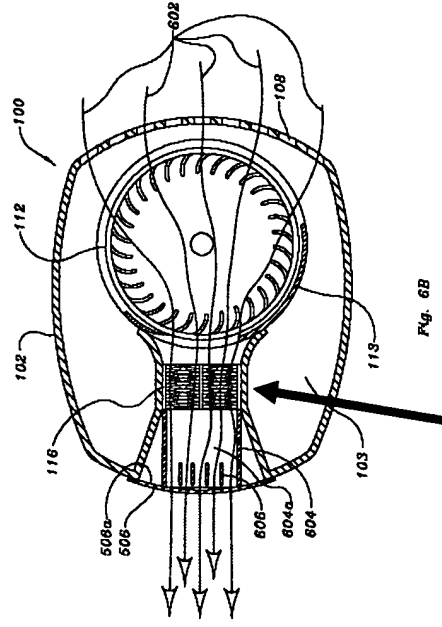


Fig. 6B

Serial No. 10/827,145: